

Amendments to the Drawings:

The attached sheets of replacement drawings include changes to Figs. 1 and 3. The attached sheets for Figs. 1 and 2; and Figs. 3 and 4 replace the original sheets and correct for typographical errors. No new matter has been added.

Attachment: Replacement Sheets (2)

REMARKS

Applicant respectfully traverses and requests reconsideration.

Applicant wishes to thank the Examiner for the notice that claims 16-23 are allowable and that claims 2-6 and 11-13 would be allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, 2nd paragraph and to include all of the limitations of the based claim and any intervening claims.

Claims 1-9 remain rejected under 35 U.S.C. § 112, 2nd paragraph. More specifically, the Examiner stated that in independent claim 1 “there is no operation or purpose recited for the ‘master controller.’” Accordingly, Applicant has amended claim 1 to clarify that the apparatus includes a “dynamic voltage supplier operative to receive a supply voltage indicator from the master controller.” Applicant also amended claim 1 to clarify that the apparatus’s adaptive body biaser receives a body bias indicator “from the master controller.” Applicant believes that this amendment will sufficiently overcome the § 112 rejection and therefore respectfully requests reconsideration.

Claim 10 and its dependent claims 11-15 also remain rejected under 35 U.S.C. § 112, 2nd paragraph. More specifically, claims 10-15 were “deemed indefinite for similar reasons as discussed with the apparatus of claims 1 and 7-9.” While claim 1 may have been unclear as to where the supply voltage indicator and body bias indicator came from, Applicant respectfully suggests that this problem does not exist in claim 10. Since claim 10 is a method claim, the underlying structure of claim 1 is not necessary to avoid an indefinite finding. Claim 10 states that the method includes “generating a supply voltage indicator and a body bias indicator ...,” “generating a supply voltage in response to the supply voltage indicator ...,” and “generating a body bias voltage in response to the body bias indicator ...” Because the method sets out how

each element is generated and then used and because the claim is a method claim, no underlying structure is needed to establish that the claim is not indefinite. Accordingly, Applicant respectfully requests that the Examiner reconsider the rejection under 35 U.S.C. § 112, 2nd paragraph for claims 10-15.

Applicant also submits replacement drawings for FIGs. 1 and 3 that correct typographical errors.

Claims 1, 7-9, 10, 14, and 15 also remain rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 6,380,798 (“Mizuno”). The Examiner referred to FIG. 1 stating that the circuit had components similar to “a master controller (providing signal 103)”; “a dynamic voltage supplier (101)”; “an adaptive body biaser (102)”; and “a plurality of computing devices (100),” “all connected and operating similarly as recited by Applicant” to suggest that Mizuno anticipated the subject matter of claim 1. However, Applicant respectfully submits that the circuit described in Mizuno is not a circuit that has, inter alia, a plurality of computing devices each of them having one of a plurality of threshold voltages. Moreover, the bias voltage in Mizuno is not connected and does not operate similarly as recited by Applicant. Instead, Mizuno describes the single threshold voltage circuit and Adaptive Supply Voltage and Body Bias (ASB) approach for actual power and leakage control as disclosed, for example, in Applicant’s Background section of the Application.

As Applicant described, this approach is well known to those having ordinary skill in the art, but the approach is significantly limited to applications in which all devices have the same threshold voltages. As such, the claims are in condition for allowance.

For example, as to claim 1, Applicant respectfully submits that Mizuno does not describe “a plurality of computing devices, each of the computing devices having one of a plurality of

threshold voltages, the plurality of computing devices operative to receive a supply voltage from the dynamic voltage supplier and a body bias voltage from the adaptive body biasee.” For example, although the Examiner cited to FIG. 1 in Mizuno, Applicant respectfully submits that this figure actually shows a single computing device that has a single threshold voltage. Also, although FIGs. 2, 6, and other FIGs. of Mizuno show at least two computing devices, such as CKT1 and CKT2 in FIG. 2, for example, Mizuno does not show “each of the computing devices having one of a plurality of threshold voltages, the plurality of computing devices operative to receive a supply voltage from the dynamic voltage supplier and a body bias voltage from the adaptive body biasee.” Instead, Mizuno shows only one body bias voltage for one of the plurality of computing devices, shown as vbp going to CKT2 (see e.g. FIG. 2). Note that the other circuit in FIG. 2, CKT1, only has vddq, which is not a body bias voltage.

As one additional example, FIG. 6 of Mizuno also fails to show multiple threshold devices and does not show a “plurality of computing devices operative to receive a supply voltage from the dynamic voltage supplier and a body bias voltage ...” (emphasis added). CKT1 only has vddq without a body bias voltage. CKT3 and CKT4 do have separate supply voltages, vdd and vddc, but both of these computing devices share the same body bias voltage, namely vbp, and have the same threshold voltage.

Mizuno’s Summary of the Invention further clarifies that Mizuno does not disclose that different computing devices with differing threshold voltages may have independently controlled body bias voltages. While Mizuno’s Summary of the Invention specifically mentions that the power supply may be controlled by a second power supply voltage control means (Col. 4, L. 30-32), Mizuno only mentions that the substrate bias of the second controlled circuit may be controlled by the substrate bias control means, not a second substrate bias control means (Col. 4,

L. 42-44). Multiple power supply voltages can be used for different circuits having the same threshold voltages to reduce power consumption. For example, a higher VDD may be used for more precise circuits, and a lower VDD may be used for less precise circuits, among other reasons for using different power supply voltages. As such, these claims are in condition for allowance.

As to claim 10, Mizuno does not teach "providing the supply voltage and the body bias voltage to a plurality of computing devices, each of the computing devices having one of a plurality of threshold voltages." For example, as discussed above, although Mizuno discloses, among other things, that different computing devices may have different supply voltages, it does not disclose providing different body bias voltages to circuits having different threshold voltages. As such, claim 10 is in condition for allowance.


The dependant claims 7-9, 14, and 15 all depend on allowable base claims, add additional novel and nonobvious subject matter, and are believed to be in condition for allowance.

New claim 24 is also allowable for the relevant reasons stated above.

Accordingly, Applicant respectfully submits that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

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